

ABRAMOV, A.A. (Moskva); UL'YANOVA, V.I. (Moskva)

Calculation of equations for determining the energy levels of an
ionized hydrogen molecule. Zhur. vych. mat. i mat. fiz. 1
no.2:351-354 Mr-Apr '61. (MIRA 14:8)
(Differential equations) (Molecules) (Hydrogen)

ABRAMOV, A.A. (Moskva)

Transfer of boundary conditions for systems of ordinary linear differential equations (variant of the selection method). Zhur. vych. mat. i mat. fiz. 1 no.3:542-545 My-Je '61. (MIRA 14:8)
(Differential equations, Linear)

ABRAMOV, A.A. (Moskva)

Transfer of the boundary conditions for certain systems of
ordinary linear differential equations. Zhur.vych.mat.i mat.fiz.
1 no.4:733-739 J1-Ag '61. (MIRA 14:8)
(Differential equations, Linear)

ABRAMOV, A.A.

6

- ABRAMOV, A. A., Computer Center, Academy of Sciences USSR /1959 position/ - "Numerical solution of linear algebra problems arising in mathematical physics" (Session 26)
- CHEKREYCHAIK, Yu. K., Computer Center, Academy of Sciences USSR /1960 position/ - "Cold cathode-tube blocks in computers" (Session 47)
- DORONITSYN, A. A., Computer Center, Academy of Sciences USSR, Active Member, Academy of Sciences USSR - "Partial differential equations of the mixed type and methods of their solution" (Invited paper, Session 4)
- GLUSHKOV, V. M., Director, Computer Center, Academy of Sciences Ukrainian SSR, Kiev /1961 position/ - "Some problems of learning automata" (Session 12)
- KASHIANSKIY, A. A., "The use of computers in organization of industrial methods of building construction" (Session 25)
- KOVALEVSKIY, V. A., Computer Center, Academy of Sciences Ukrainian SSR, Kiev /1960 position/ - "Automatic recognition of typewritten letters" (Session 36)

report to be submitted for the 2nd Intl. Congress for Information Processing, IFIPS, Munich, West Germany, 27 Aug - 1 Sep 1962.

33297
S/208/62/002/001/011/016
D299/D303

16.1500

AUTHOR: Abramov, A.A. (Moscow)

TITLE: On determining the principal part of some algebraic problems

PERIODICAL: Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki, v. 2, no. 1, 1962, 141 - 145

TEXT: In the reference, calculation of several first eigenvectors and eigenvalues is considered of the higher-order symmetrical matrix A (i.e. solution of the problem $AX = \Lambda BX$, $A = A^*$, $B = B^* > 0$, $X \neq 0$), where the algebraical problem arose out of an application of Ritz's method. Thereby the circumstance is used that the corresponding "minor" algebraic problem: $ax = \lambda x$ yields a solution close to that of the "major" problem, (c belonging to A). In the present article, this algorithm is adapted to algebraical problems which arise from difference methods; thereby it becomes necessary to somewhat transform the "major problem". As an example, calculation of first eigenvalues and eigenfunctions of the integral equation

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On determining the principal ...

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$$\int_0^1 \mathcal{K}(t, \tau) y(\tau) d\tau = ly(t) \quad (1)$$

is considered. By a simple approximation, Eq. (1) is replaced by the algebraic equation

$$\sum_{j=1}^N K_{ij} Y_j = \Lambda Y_j, \quad i = 1, \dots, N, \quad K_{ij} = \frac{1}{N} \mathcal{K}\left(\frac{i-1}{N}, \frac{j-1}{N}\right). \quad (2)$$

Assume N even, $N = 2n$. New variables are introduced by the formulas

$$W_i = \frac{Y_{2i-1} + Y_{2i}}{2}, \quad Z_i = \frac{Y_{2i-1} - Y_{2i}}{2}. \quad (3)$$

In the new variables, Eq. (2) is written

$$A_{11}W + A_{12}Z = \Lambda W, \quad A_{21}W + A_{22}Z = \Lambda Z, \quad (4)$$

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On determining the principal ...

where A_{11} , A_{12} , etc. are matrices. It is shown that problem (4) satisfies all the requirements of the above-mentioned algorithm. The transition to new variables by (3), can be successfully used in solving the nonhomogeneous integral equation

$$y(t) = \int_0^1 K(t, \tau) y(\tau) d\tau + f(t).$$

Thereby one obtains (instead of (2)), the system

$$Y_i = \sum_{j=1}^N K_{ij} Y_j + F_i, \quad i = 1, \dots, N, \quad F_i = f\left(\frac{i-1/2}{N}\right).$$

The change of variables (3) yields

$$W = A_{11}W + A_{12}Z + \Phi, \quad Z = A_{21}W + A_{22}Z + \Psi, \quad (5)$$

where Φ and Ψ are matrices with F as elements. It is shown that the
Card 3/4

ABRAMOV, A. A.

Mathematical model of the Mekong River. Vest. AN SSSR 33 no.1:
81-82 Ja '63. (MIRA 16:1)

(Mekong River—Mathematical models)

ABRAMOV, A.A. (Moskva); ANDREYEV, V.B. (Moskva)

Derivation of periodic solutions to differential and difference
equations using the drift method. Zhur.vych.mat.i mat.fiz. 3
no.2:377-381 Mr-Apr '63. (MIRA 16:4)
(Differential equations) (Difference equations)

ABRAMOV, A.A.

Regularities of the hydrophobic nature and the flotation of sericite
and chlorite in the presence of anion collectors. TSvet. met. 36 no.
11:16-19 N '63. (MIRA 17:1)

25(2)

AUTHOR:

Abramov, A. D.

SOV/32-25-3-35/62

TITLE:

Stand for the Testing of Real Torsion Springs With Respect to Their Durability (Stend dlya ispytaniya v naturnu torsionnykh ressor na vyнослиvost')

PERIODICAL:

Zavodskaya Laboratoriya, 1959, Vol 25, Nr 3, pp 349-351 (USSR)

ABSTRACT:

A stand for the testing of torsion shafts is described which was worked out by the author of the present paper together with Yu. N. Varaksin (patent Nr 107286). The operation principle of this device is based upon the use of resonance phenomena. Excitation is performed by means of a crankshaft which is connected with an elastic flywheel over a friction element (Fig 1). On this stand the simultaneous testing of two shafts of up to 2000 mm length is possible in which case the shafts are fixed on the one end to the flywheel shaft and on the other to a stable bracket. The entire rigidity of the system is therefore twice as high as the rigidity of the shaft (Fig 2). In the operation of the stand, during the application of stress to one shaft, stress is lifted from the other; an unequal application of stress is also possible if two shafts with dif-

Card 1/2

SCV/32-25-3-35/62

Stand for the Testing of Real Torsion Springs With Respect to Their
Durability

ferent rigidity are tested (Fig 2). The existing control mechanism permits changes of the amplitude of the working cycles so that loading can be carried out according to a certain program. Several experimental results, obtained under the assistance of Professor P. P. Kochegarov, show (Table 1) that the highest increase in resistivity is brought about by knurling. There are 2 figures and 1 table.

Card 2/2

ABRAMOV, A.F.

Pneumatic mail transportation channels from polyethylene. Vest.
sviazi 23 no.7:20-21 J1 '63. (MIRA 17:2)

1. Galvnyy inzh. Tambovskoy mezhdugorodnoy telefonnoy stantsii.

KOYTIKH, Boris L'vovich; MITROKHIN, Gleb Aleksandrovich; NEMTSEV, Anatoliy Viktorovich. Prinimali uchastiye: ABRAMOV, A.G.; LEMEKHOV, L.K.; SAMOYLOVICH, T.A., red.; KLAPISOVA, T.F., tekhn. red.

[New welding processes in ship repairs] Novye tekhnologicheskie protsessy svarki v sudoremonte. Moskva, Izd-vo "Morskoi transport," 1962. 55 p. (MIRA 15:9)
(Ships—Maintenance and repair) (Welding)

ABRAMOV, A.

IA 159T104

USSR/Radio - Receivers
Recorders, Magnetic

May 50

"Primag-2 (Combination Receiver and Tape Recorder),"
A. Abramov, 4 pp

"Radio" No 5

Describes, with schematic diagrams, combination receiver and tape recorder, permitting reproduction of broadcast and microphone recordings on magnetic tapes. Tone quality is even better in recording than in direct reception because of better frequency response of recorder amplifier.

159T104

ABRAMOV, A.

PA 171T100

USSR/Radio - Oscillators
Amplifiers

Sep 50

"Frequency-Sweep Oscillator for Band-Width
Indication," A. Abramov

"Radio" No 9, pp 53-55

Shows applications of "Oscillograph Attachment"
described previously by M. S. Zhuk ("Radio" No
.11, 1949). Gives typical oscilloscope patterns
for resonance curves for various amplifier
tune-ups. Abramov used this oscillator in tun-
ing receiver part of the "Primag-2" ("Radio" No
5, 1950).

~~171T100~~ 171T100

ABRAMOV, A. G.

IA 242T42

USSR/Electricity - Protective Equipment Feb 52
Fuses

"Renewal of Type PK Fuses," Engr A. G. Abramov

"Prom Energet" No 2, pp 11-12

Discusses practical problems encountered in renewing sand-filled type-PK power fuses, citing high incidence of breakdowns resulting from inadequate knowledge on part of repair personnel, use of waste sand and river sand (instead of prescribed pure sand containing not less than 99% quartz) for filler, etc. Suggests centralization of fuse-renewal facilities due to expense of shops and shortage of trained personnel.

242T42

ABRAMOV, A. G.

Economy of Conductor Materials, A.G.Abramov. *Pror. Energet.*, no.4, pp 16-18, 1953

Describes nomogram method for selecting correct bus-bar parameters. Review of number of plans for high-voltage installations revealed organizations were specifying, on basis of calculations, bus-bars with mechanical stress somewhat below permissible value, instead of close to it, thus wasting nonferrous metals.

254T50

GERSHUN, L.Z.; ABRAMOV, A.G.; DMITRIYEV, L.G.

Using an exciter to start a generator used as a synchronous compensator.
Energ.biul. no.8:26-27 Ag '53.

(MLRA 6:8)

(Dynamos)

ABRAMOV, A.G., inzhener.

Some shortcomings in planning electrotechnical installations. Prom.energ.
10 no.5:26 My '53. (MLRA 6:5)
(Electric substations)

ABRAMOV, A.G.

GERSHUN, L.Z., inzhener; ABRAMOV, A.G., inzhener; DMITRIYEV, L.G., inzhener.

Starting a generator in the capacity of a synchronous compensator with the aid of an exciter. Energetik 2 no.5:15-17 My '54. (MLRA 7:6)
(Dynamos)

ABRAMOV, A. G.

Subject : USSR/Electricity AID P - 3549
Card 1/2 Pub. 29 - 13/27
Author : Abramov, A. G., Eng.
Title : ~~Problem of raising the power factor of industrial establishments~~
Periodical : Energetik, 11, 16-17, N 1955
Abstract : The author discusses the methods suggested in government instructions and rules for raising the power factor. He considers in particular the method of switching over from delta to star connection in induction motors up to 1000 v, normally loaded at less than 40%. The editors in a note write that the interested Ministries decided to start production in 1956 of 1 to 10-kv, 380-v induction motors with an arrangement to switch over from delta to star when these motors operate under less than 35% of nominal load.

Energetik, 11, 16-17, N 1955

AID P - 3549

Card 2/2 Pub. 29 - 13/27

Institution : None

Submitted : No date

ABRAMOV, A.G., inzhener; SHMAKOV, V.N., inzhener.

: Inductive self-regulating starting rheostat for asynchronous motors
with wound rotor. Energetik 4 no.7:23-25 J1 '56. (MLRA 9:9)
(Electric motors--Starting devices)

15(6)

AUTHORS:

Kaplan. A. Yu., Abramov, A. G., Shmakov, V. N.

SCV/72-59-2-13/21

TITLE:

Three-Phase Induction Continuous-Operation Furnace for the Annealing of Glass Products (Induktsionnaya trekhfaznaya konveyernaya pech' dlya otzhiga steklyannykh izdeliy)

PERIODICAL:

Steklo i keramika, 1959, Nr 2, pp 39-40 (USSR)

ABSTRACT:

Muffle furnaces of the LN 1000 x 18 type, that are heated by liquid or gaseous fuels, present various deficiencies in the annealing process of glass products. For this reason the bottle factory Konstantinovka and the glass works Krasnodar introduced electric heating, carried out by means of heating elements in the hearth or in the lower muffle channel. However, deficiencies were found here as well. The authors of the present paper developed and tested the three-phase induction continuous operation furnace (see Figure). The furnace features a body at the top, consisting of welded 8 mm-thick steel sheet. The body has a heat insulator topped by a 35 mm² cross section copper wire winding. The winding is three-phase for 380 V and 50 cycles. The connection scheme is shown in the figure. The body is heated by eddy currents forming in the magnetic field.

Card 1/2

Three-Phase Induction Continuous-Operation Furnace for the Annealing of Glass Products

SOV/72-59-2-13/21

Glass bottles of a 0.5 l content are conveyed in the annealing tunnel by means of a net assembly line. The existing LN 1000 x 18 continuous operation furnaces can be easily and cheaply adapted to the induction heating system. Annealing costs of 1 t 1/2-liter bottles are lower by 25% with induction heating as compared with natural gas heating. Furthermore the waste percentage is considerably lower. Conclusions: Induction furnaces guarantee the required annealing conditions. The furnace temperature can be controlled in a simple manner. Heat consumption as referred to a production unit is lower. Working safety is higher and repairing costs are lower. Factory overall working conditions are improved. There is 1 figure.

ASSOCIATION: Krasnodarskiy stekol'nyy zavod (Krasnodar Glass Works)

Card 2/2

ABRAMOV, A.G., inzh.

Design of an automatic induction rheostat for starting asynchronous
motors with phase rotors. Energetik 12 no.6:19-21 Je '64.
(MIRA 17:9)

ABRAMOV, A.G., inzh. (Krasnodar)

Dimensional series of automatic induction rheostats for
electric motors with phase rotors. Elektrichestvo
no.12:46-49 D '65. (MIRA 18:12)

Абрамов, Александр Иванович.
ABRAMOV, Aleksandr Ivanovich; CHERNIKOV, A.P., red.; LYUDKOVSKAYA,
N.I., tekhn.red.

[The work of the physician in Pioneer camps in the country]
Rabota vracha v zagorodnom pionerskom lagere. Moskva, Gos.
izd-vo med.lit-ry, 1957. 65 p. (MIRA 11:1)
(CAMPING) (CHILDREN--CARE AND HYGIENE)

ABRAMOV, A.I. (Syzran')

Organizational work at Syzran Public Health Department in raising personnel standards. Zdrav. Ros. Feder. 5 no.9:10-11 S '61.

(MIRA 14:9)

1. Zaveduyushchiy otdelom zdravookhraneniya, Syzran'.
(SYZRAN--PUBLIC HEALTH)

ABRAMOV, A.I.

~~Handwritten:~~ Nationalization of the Volga Basin river fleet. Rech. tranap.
17 no.2:35-56 F '58. (MIRA 11:2)
(Volga River--Merchant marine--Government ownership)

1. 1. 1.

Homemade electric motors and steam engines. Moskva, Gos. izd-vo detskoi
lit-ry, 1946. 117 p.

Gyr. 4 TK52

ABRAMOV, A.

Samodel'nye elektricheskie i parovye dvigateli (Hand-made electric and steam engines).
Eniga iunogo tekhnika. No. 1. Moskva, Detgiz, 1953. 136 p.

SO: Monthly List of Russian Accessions, Vol 7, No. 8, Nov. 1954

ABRAMOV, A. I.

AID P - 442

Subject : USSR/Electricity

Card 1/1 Pub. 27 - 5/34

Author : Petrov, G. N., Dr. Tech. Sci., Prof., and
Abramov, A. I., Kand. Tech. Sci.

Title : Voltages between Windings of Electric Machines caused
by Transient Phenomena

Periodical : Elektrichestvo, 7, 24-31, J1 1954

Abstract : Transient phenomena occurring in windings of high voltage
motors with multi-turn coils are discussed on the basis
of experimental studies. The character and distribution
of surge voltages across the coils and turns are explained
and transient phenomena occurring at the switching of the
motors are analysed. Results obtained are extended to low
voltage motors and high voltage generators. 17 diagrams,
3 Russian references (1945-1950).

Institution : Moscow Power Institute im. Molotov

Submitted : Mr 20, 1954

ABRAMOV, A.I.

VINOGRADOV, Nikolay Vladimirovich; GORYAINOV, Fedor Alekseyevich; SERGEYEV, Petr Sergeyevich; ABRAMOV, A.I., redaktor; FRIDKIN, L.M., tekhnicheskii redaktor; MEDVEDEV, L.M., tekhnicheskii redaktor

[Designing electric machinery] Proektirovanie elektricheskikh mashin. Pod obshchei red. P.S.Sergeeva. Moskva, Gos. energ. izd-vo, 1956.
504 p. (MIRA 10:1)

(Electric machinery)

Abramov, A.
ABRAMOV, A.

Commutators with ball blades. IUn.tekh. 2 no.11:54 N '57.

(Electric machinery)

(MIRA 10:11)

AUTHORS: 1) Zaleskiy, A. M. Professor, Doctor of Technical Sciences 105-58-3-24/31
2) Korolev, V. N. , Engineer
3) Abramov, A. I. , Candidate of Technical Sciences

TITLE: On the Selection of Test Voltages for the Winding Insulation in High-Voltage Motors (O vybore ispytatel'nykh napryazheniy vitkovoy izolyatsii v vysokovol'tnykh dvigatelyakh)

PERIODICAL: Elektrichestvo, 1958, Nr 3, pp. 84 - 86 (USSR)

ABSTRACT: This is a comment on the paper by A. I. Abramov in the periodical "Elektrichestvo", 1955, Nr 9 and by Z. G. Kaganov in the same periodical, 1957, Nr 6.
1) A. I. Abramov points to the fact that the test voltage, amounting to 1,3 U at 50 cycles is insufficient for the interwinding insulation of the machine. This is generally known, and the controversy is only about the problem by which voltage it is to be replaced. The method given by Abramov shows an essential deficiency: The test voltage is by him connected with the limiting of overload voltage, without taking into consideration that the test voltage is destined for a separation of useless or inadequate winding coils.

Card 1/2

On the Selection of Test Voltages for the Winding Insulation in High-Tension Motors

105-58-3-24/31

Zalesskiy consented to a proposal by Z. G. Kaganov to test the winding insulation with a test voltage of 2,5 kV_{max} per winding after the coils have been embedded in the slots.
 2) The recommendations by Kaganov for test voltages are unfounded. Just as unfounded is the assumption that the surge front of the cut-off wave is analogous to the surge front of the switch-on wave, and that this wave will act in its totality on the insulation of the winding.
 3) Abramov does not agree with the method of the selection of test voltages and with their values as proposed by Kaganov. It is shown that at present no convincing reasons confirmed by experiments can be submitted for an increase of test voltages above 1500 V_{max}. There are 1 table and 2 Soviet references

ASSOCIATION:

- 1) Leningradskiy politekhnicheskii institut im. Kalinina (Leningrad Polytechnical Institute imeni Kalinin)
- 2) Zavod "Elektrosila" im. Kirova ("Elektrosila" Plant imeni Kirov)
- 3) Moskovskiy energeticheskii institut (Moscow Institute for Power Engineering)

Card 2/2

SERGEYEV, Petr Sergeyevich; ANDRIANOV, V.N., prof., retsenzent;
ABRAMOV, A.I., red.; LARIONOV, G.Ye., tekhn. red.

[Electric machinery] Elektricheskie mashiny. Moskva, Gos-
energoizdat, 1962. 279 p. (MIRA 15:6)
(Electric machinery)

1. Determination of the

2. Analysis of the

3. Analysis of the

4. Analysis of the

and 14 formulas, Orig. str. num: 8 figures, 2 tables,

and 14 formulas, Orig. str. num: 8 figures, 2 tables,

SUBMITTED: 01Aug64

ENCL: 00

SUB CODE: NF, TP

NO REF SOV: 020

OTHER: 007

STERMAN, L. G.; MIKHAYLOV, V. D.; VILEMAS, Yu.; ABRAMOV, A. I.

"Critical heat flows in boiling of organic fluids in tubes and in large volume."

paper submitted for 2nd All-Union Conf on Heat & Mass Transfer, Minsk, 4-12 May 1964.

POWELL, T. A.

ACCESSION NO: AP4012342

S/0096/64/000/002/0078/0081

AUTHORS: Shly*kov, Yu. P. (Candidate of technical sciences); Abramov, A. I. (Engineer); Leongardt, A. D. (Engineer); Mikhaylov, V. D. (Engineer)

TITLE: Critical thermal load in forced monoisopropyldiphenyl flow in tubes and channels

SOURCE: Teploenergetika, no.2 , 1964, 78-81

TOPIC TAGS: monoisopropyldiphenyl, forced flow, critical thermal load, underheat, saturation temperature

ABSTRACT: An experimental investigation has been made of critical thermal loads in monoisopropyldiphenyl (MIPD) forced flow on a flat plate and in a tube under large flow and temperature variations. The flow analyses were conducted in a closed circuit system with all structural components, in contact with MIPD, made from 1Kh18N9T steel. Pressure measurements were made by a differential manometer type DSE-9A and a secondary instrument DSPI-02. Heating was accomplished electrically, and the thermocouple measurements were recorded on EPP-09 potentiometer. The critical thermal load for the plates varied from 3.7×10^6 to 4.8×10^6 kcal/m² hr

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ACCESSION NO: AP4012342

at speeds of 6.3 m/sec and 4.2 m/sec, underheat temperature variation range from 120 to 195C, and pressures of 3 to 6 atm. It is shown that the critical thermal flow varies linearly with the underheat temperature. A similar study in a 10-mm by 150-mm tube yields the same result up to 100C, after which the slope of linear growth of critical heat flow versus temperature decreases by about 20%. The experimental results indicate that forced flow of MIPD attains large critical thermal flow values before reaching saturation temperatures. Orig. art. has: 5 figures and 2 tables.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 14Feb64

ENCL: 00

SUB CODE: AI

NO REF SOV: 006

OTHER: 001

Card 2/ 2

ACCESSION NR: AP4043309

S/0143/64/000/007/0108/0110

AUTHOR: Mikhaylov, V. D. (Engineer); Abramov, A. I. (Engineer)

TITLE: Determination of burnout heat flux during the boiling of monoisopropylbiphenyl in a tube

SOURCE: IVUZ. Energetika, no. 7, 1964, 108-110

TOPIC TAGS: heat exchange, heat exchanger, burnout heat flux

ABSTRACT: The results of an experimental investigation of the critical heat flux of monoisopropylbiphenyl under surface-boiling conditions in 10-mm-diameter, 100-mm-long tubing are reported; the experimental setup and methods were described earlier by L.S. Sterman and V. D. Mikhaylov (Teploenergetika, no. 2, 1963). The critical heat flux was measured at 2 and 8 atm and at circulation velocities of 4 and 8 m/sec, with subcooling temperatures (below the saturation temperature) of 0-194C. The effect of the circulation rate on the critical heat flux was also measured at 2 atm. Orig. art. has 2 figures.

Card 1/2

ACCESSION NR: AP4043309

ASSOCIATION: Moskovskiy ordena Leuina energeticheskiy institut
(Moscow Power-Engineering Institute)

SUBMITTED: 30Oct63

ATD PRESS: 3078

ENCL: 00

SUB CODE: OC, TD

NO REF SOV: 004

OTHER: 000

Card: 2/2

40887-66 ENT(1)/ENT(m)/ENT(j) RA/GD/A.

ACC NR: AT6021841 (A)

SOURCE CODE: UR/0000/65/000/000/0131/0145

AUTHOR: Sterman, L. S.; Mikheylov, V. D.; Vilemas, Yu.; Abramov, A. I.

ORG: Moscow Power Institute (Moskovskiy energeticheskiy institut) 25

TITLE: Critical heat fluxes in boiling of organic heat transfer media in tubes and in a large volume 6+1

SOURCE: Teplo- i massoperenos. t.III: Teplo- i massoperenos pri fazovykh prevrashcheniyakh (Heat and mass transfer. v. 3: Heat and mass transfer in phase transformations). Minsk, Nauka i tekhnika, 1965, 131-145

TOPIC TAGS: boiling, heat flux, heat transfer fluid

ABSTRACT: Experiments on surface boiling in tubes were carried out in an experimental unit consisting of a closed loop with forced circulation. All the tests were made on a tube with an inside diameter of 10×10^{-3} meters, made of 1Kh18N9T steel. Values of the critical heat flux, q_{cr} , were obtained for monoisopropyldiphenyl at pressures of (2, 3, 5, 7, 8) $\times 10^5$ newtons/m² and circulation rates of 4 and 8 meters/sec, while the underheating of the liquid up to the saturation temperature varied from 0 to 190°C. With Dowtherm, the pressures were (1, 3, 5, 10) $\times 10^5$

Cord 1/2

L 40357-56

ACC NR: AT6021841

newtons/m² and the circulation rates from 5 to 15 meters/sec, while the underheating varied from 0 to 160°C. With ethyl alcohol, the pressures were (2, 5, 12.5) x 10⁵ newtons/m² and the circulation rates were 4, 8, and 15 meters/sec, while the underheating varied from 0 to 100°C. The article derives empirical dimensionless equations both for boiling in tubes and in a large volume (pool boiling). These equations are tested on existing experimental data from the literature and the results of the comparison are exhibited in a series of curves. Orig. art. has: 16 formulas, 6 figures and 3 tables.

SUB CODE: 20/ SUBM DATE: 09Dec65/ ORIG REF: 029/ OTH REF: 009

Card 2/2 MLP

AUTHORS:

Leypunskiy, A. I., Abramov, A. I., Andreyev, V. N., Baryshnikov, A. I., Bondarenko, I. I., Galkov, V. I., Golubev, V. I., Gul'ko, A. M., Gusynov, A. G., Kozachkovskiy, G. D., Kozlova, N. V., Krasnoselov, N. V., Kuz'minov, B. L., Morozov, V. N., Nikolayev, M. N., Smirnin, G. N., Tsvetkovskiy, Yu. Ya., Ukraintsev, F. I., Usachev, L. N., Fetisov, N. I., Sherman, L. I.

SCV/89-5-1-6/15

TITLE:

Investigations of the Physics of Reactors With Fast Neutrons. I
(Issledovaniya po fizike reaktorov na bystrykh neytronakh)

PERIODICAL:

Atomnaya energiya, 1958, Vol. 5, Nr 3, pp. 277-287 (USSR)

ABSTRACT:

Since 1950 experiments have been carried out with fast reactors by the Main Administration of the Use of Nuclear Energy. At the Physics Institute of this organization the fast-neutron reactor BR 1 was put into operation early in 1955, and the reactors BR 2 and BR 3 followed in 1956 and 1957 respectively.

Reactor BR 1:

Power
Active zone
Fuel
Canning

50 MW
diameter and height ~ 1 m
plutonium diameter ~ 1 cm
thin steel tube

Card 1/4
3

Investigations of the Physics of Reactors with Fast Neutrons. 1

300 89-1-1-0.15

The active zone may be surrounded by 2 mobile shields. Shield 1 consists of depleted uranium, and shield 2 of copper. An additional shield can be fastened on one side on to the shield with a diameter of 70 cm, so that total thickness can be increased to 60 - 100 cm. With this reactor investigations were carried out of: the spatial and energy distribution of the neutrons, of which the results are shown in a table for Pu^{239} (n,f), U^{233} (n,f), U^{235} (n,f), U^{238} (n,f), Np^{237} (n,f), Pu^{240} (n,f), U^{238} (n, γ), Au^{197} (n, γ), U^{238} (n,2n). Measurement of the conversion factor. The latter was determined experimentally as amounting to 2,4 to 2,5. It was also calculated by means of the multi-group computation method in S_4 -th approximation (Ref 1). The electronic computer was used under the supervision of Professor Ye. S. Kuznetsov. For computation the experimental values for μ of V. I. Kalashnikova (Ref 5), G. N. Smirenkin (Ref 6), B. D. Kuz'minov (Ref 7), and for α the values obtained by P. Ye. Spivak (Ref 8), V. N. Andreyev (Ref 9) were used. As a result of computations the coefficient was found to amount to 2,6.

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SOV/89-5-5-6/15
Investigations of the Physics of Reactors With Fast Neutrons. I

The Distribution of Neutrons in Uranium

The cross sections of the various reactions for the equilibrium spectrum and for the asymptotic spectrum of the depleted uranium was determined both theoretically and experimentally.

The asymptotic length of diffusion determined experimentally and theoretically amounts to $9,1 \pm 0,1$ cm. The average number of fissions of uranium 238 caused by fission neutrons amounts to $0,17 \pm 0,01$. This is in agreement with the data given by reference 10.

Furthermore, the influence exercised by the resonance structure of the cross sections upon the spatial distribution of the neutrons is investigated. Kh. D. Mishchenko showed that for neutrons with 24 keV the total cross section for copper is reduced by about three times its amount with a modification of target thickness of from 0,5 to 30 mm. There are 12 figures, 7 tables, and 13 references, 9 of which are Soviet.

(Continued on abstract 7/15)

Card 5/3

SOV/89-4-4-7/15

AUTHORS: Leypunskiy, A. I., Abramov, A. I., Andreyev, V. N., Baryshnikov, A. I., Bondarenko, I. I., Galkov, V. I., Golubev, V. I., Gul'ko, A. D., Guseynov, A. G., Kazachkovskiy, O. D., Kozlova, N. V., Krasnoyarov, N. V., Kuz'minov, B. D., Morozov, V. N., Nikolayev, M. N., Smirenkin, G. N., Stavisskiy, Yu. Ya., Ukraintsev, F. I., Usachev, L. N., Fetisov, N. I., Sherman, L. Ye.

TITLE: Investigations of the Physics of Reactors With Fast Neutrons.II
(Issledovaniya po fizike reaktorov na bystrykh neytronakh)
(Continued from abstract 6/15)

PERIODICAL: Atomnaya energiya, 1958, Vol. 5, Nr 3, pp. 288-293 (USSR)

ABSTRACT: The reactivity and the kinetics of the reactor were measured. It could be shown that in the center of the active zone the weight of the 5 MeV neutrons is higher by $\sim 15\%$ than that of 250 MeV neutrons. The effective yield of the delayed neutrons in the reactor with a uranium shield exceeds that of a reactor with a copper shield by 1,4 times its amount.

Reactor BR 3:

The active plutonium zone is the same as in reactor BR-1. In the center of the reactor a water-uranium channel is provided, which is separated from the plutonium zone by a uranium layer

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SOV/89-5-3-7-15

Investigations of the Physics of Reactors With Fast Neutrons.II

of 8 cm thickness. The uranium-water lattice consists of cylindrical slugs of normal uranium, which have a diameter of 35 mm. The canning material is aluminum. The ratio between water and uranium is 0,35. The lattice spacing is 40 mm. Measurements carried out with the water-uranium lattice instead of with the pure uranium layer showed:

- 1) The conversion factor is reduced from $2,45 \pm 0,10$ to $1,7 \pm 0,2$.
- 2) In the case of a fixed power output of the active zone the velocity with which the total quantity of plutonium 239 and uranium 235 is formed was increased by 35%.
- 3) The velocity with which plutonium is produced increased by 1,8 times its amount.
- 4) In the case of a fixed power output of the active zone the total power output of the reactor is increased by 2.2 times its amount.

Reactor BR -2:

This reactor was described more in detail in references 12 and 13. Its nominal power output is 120 kW, the maximum output is 200 kW. In the active zone of the reactor BP-2, which consists of plutonium rods, mercury is used as a coolant, which takes up

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SOV/89-5-3-15

Investigations of the Physics of Reactors With Fast Neutrons. II

~17% of the total volume of the active zone. The regulating rods (interior of shield) are made from a copper-nickel alloy. The external shield consists of uranium slugs canned with stainless steel. Thickness ~25 cm. The uranium shield is surrounded by copper of 15 cm thickness.

The presence of mercury in the active zone leads to a decrease of the content of fast neutrons in the spectrum. The conversion factor was $1,6 \pm 0,2$.

Theoretically the kinetic equation for this reactor was calculated by G. I. Marchuk according to the method developed by V. S. Vladimirov. Theoretical calculation of the critical mass was carried out with an error of 4%, and that of the effectiveness of the regulating rods with an error of 8%. The effective yield of the delayed neutrons was found to amount to 0,27%, while the experimental value was $0,24 \pm 0,04\%$. There are 7 figures, 1 table, and 13 references, 9 of which are Soviet.

Card 3/4

SOV/120-59-4-10/50

AUTHOR: Abramov, A. I.

TITLE: Small Size Ionization Chamber Filled with He³ at a Pressure of 4 atmospheres.

PERIODICAL: Pribery i tekhnika eksperimenta, 1959, Nr 4, pp 56-57 (USSR)

ABSTRACT: A small size spherical ionization chamber is described, suitable for spectrometric measurements on fast neutrons. The chamber is shown in Fig 1. The body of the chamber 1 consists of two identical brass hemispheres screwed together along a diametric plane, as shown in Fig 1. The outer diameter of the chamber is 30 mm, the wall thickness is 2 mm and the working volume is about 9 cm³. The copper tube 2 is used to introduce the working mixture into the chamber. 3 is a thin-walled stainless steel tube and 4 is a quartz insulator carrying the collecting electrode 5. The collecting electrode is in the form of a brass sphere 5, 1 mm in diameter. The gas mixture consists of 50% He³ and 50% Ar at a total pressure of 8 atm. The energy resolution is ± 30 Kev

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SOV/120-59-4-10/50

Small Size Ionization Chamber Filled with He^3 at a Pressure of 4 atm for slow neutrons and 480 Kev for 600 Kev neutrons. Fig 2 shows typical spectra obtained with thermal and 560 Kev neutrons. The 560 Kev peak is wider than the thermal peak, but this is stated to be due to an energy spread in the neutron beam. Acknowledgments are made to O. D. Kazachkovskiy and Yu. Ya. Stavisskiy for help in a number of valuable suggestions. There are 2 figures and 2 references, of which 1 is Soviet and 1 English.

SUBMITTED: June 20, 1958.

Card 2/2

21(9)

AUTHORS:

Abramov, A. I., Yutkin, M. G.

SOV/89-6-5-17/33

TITLE:

Measurement of the Hard Fraction of the Neutron Spectrum in the Reactor BR-5 by Means of a He³-Ionization Chamber
(Izmereniye zhestkoy chasti neytronnogo spektra v reaktore BR-5 ionizatsionnoy kameroy s He³)

PERIODICAL:

Atomnaya energiya, 1959, Vol 6, Nr 5, pp 575-576 (USSR)

ABSTRACT:

A small spherical ionization chamber filled with a He³ + Ar-mixture is used for measuring the neutron spectrum of BR-5 (Ref 1). The active zone of the reactor consists of plutonium oxide surrounded by nickel. The use of He³ for the purpose of detecting fast neutrons is described in more detail by references 2-6. The ionization chamber with preamplifier is inserted into various beam tubes (e.g. central channel passing through the center of the core; oscillator channel passing the core center at a distance of 430 mm), and the neutron spectra are measured: For pulse separation a single-channel catalyst is used. For each channel the neutron spectrum is recorded. That of the oscillator channel is mentioned as an example. Neutrons having an energy of more than 1 Mev occur comparatively rarely,

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Measurement of the Hard Fraction of the Neutron Spectrum SOV/89-6-5-17/33
in the Reactor BR-5 by Means of a He³-Ionization Chamber

and therefore washing out due to helium rebound in the chamber may be neglected. During measurement of the active zone the helium rebound in the momentum spectrum is, however, distinctly marked. It was, for the time being, taken into account only on the basis of theoretical calculations and will be experimentally checked after all work connected with putting the BR-5 into operation will have been completed. There are 1 figure and 7 references, 1 of which is Soviet.

SUBMITTED: January 8, 1959

Card 2/2

ABRAMOV, A. I., YUTKIN, M. G.

"The Measurement of Neutron Spectra in Fast Reactors by Means of an Ionization Chamber Filled with He3,"

paper presented at the Symposium of the International Atomic Energy Agency on Fission Neutron Research in Physics, Vienna, 17-21 Oct 1960.

ABRAMOV, A.I.

Calculating the shape of momentum distribution for ionization
chambers. Prib.i tekhn.eksp. no.4:66-71 J1-Ag '60.(MIRA 13:8)
(ionization chambers)

ABRAMOV, A. I., ALEKSEYEV, Y. A., ANISTANOV, N. V., LINDARUNIK, I. I.,
KRASNOYAR V, N. Y., KOROZOV, V. E., NIKOLAEV, N. E., PINCHASIE, M. S., SHURENIN, G.
ST VISNIY, Y. Y., SAINIKOV, O. A., UKRAINTSIV, P. I., USACHY, L. E.,
LEYFENSKIY, A. I., KAZACHKOVSKIY, O. D.

Physical characteristics of the BR-5 reactor

report submitted for the IAEA Seminar on the Physics of Fast and Intermediate
Reactors, Vienna, 3-11 August 1961

(report presented by G. I. Marchuk)

Acad, Sci, USSR, Moscow

ABRAMOV, A.I.

Using Ne^{21} in the spectrometry of fast neutrons. Prib.1 tekhn. eksp.
6 no.5:30-33 S-0 '61. (MIRA 14:10)
(Neutrons) (Spectrometry)

21406

S/089/61/011/006/002/014

B102/L138

24/000

AUTHORS: Leypunskiy, A. I., Abramov, A. I., Aleksandrov, Yu. A.,
Anikin, G. V., Bondarenko, I. I., Guseynov, A. G.,
Ivanov, V. I., Kazachkovskiy, O. D., Kuznetsov, V. F.,
Kuz'minov, B. D., Morozov, V. N., Nikolayev, M. N.,
Sal'nikov, O. A., Smirenkin, G. N., Soldatov, A. S.,
Usachev, L. N., Yutkin, M. G.

TITLE: Investigation of the BR-5 (BR-5) fast reactor (spatial and
energy distributions of neutrons)

PERIODICAL: Atomnaya energiya, v. 11, no. 6, 1961, 498 - 505

TEXT: The fast research reactor BR-5 and its experimental equipment is
described in brief and some of its neutron spectra are given and discussed.
The following data are given: fuel - plutonium oxide; coolant - sodium;
reflector - thin layer of natural uranium plus thick layer of nickel;
power - 5000 kw. The reactor has many vertical and horizontal holes for
technical and physical studies and is well supplied with experimental
equipment. Leypunskiy gave a detailed description of the BR-5 reactor at

Card 1/4

Investigation of the...

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the Second Geneva Conference (1958). Inside the core the neutrons have energies of more than 100 kev which they lose almost completely in passage through reflector and shield. In the outer layers of the shield, their mean energy does not exceed some tens of ev. In the kev range ($E_n > 50$ kev) spectra were measured for the most important beams and channels. For the other cases, they were determined from threshold reactions. The soft part of the spectrum within the reflector was determined from the spatial distribution of neutrons with $E_n \approx 5$ ev, recorded with gold resonance indicators. The total neutron flux was determined only at the points where the Pu^{239} fission cross section was constant. Direct neutron spectrum measurements were carried out in a vertical (OK-70) and a horizontal (B-3) channel using $(\text{He}^3 + \text{Ar})$ -filled ionization chamber in the first case and the neutron transmission method with n-hexane in the second. The neutron spectrum of the horizontal channel was also determined by photoemulsions. From the rates of indicator and fission reactions $\text{Au}^{197}(n, \gamma)$, $\text{U}^{235}(n, f)$, $\text{Pu}^{239}(n, f)$, $\text{Th}^{232}(n, f)$, $\text{Na}^{23}(n, \gamma)$, $\text{Cu}^{63}(n, \gamma)$, and $\text{Al}^{27}(n, \alpha)$ the abrupt

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Investigation of the...

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drop in neutron energy in the Ni reflector was determined, and the activity caused by resonance neutrons ($E_n = 4.9$ ev). The fast neutron flux ($E_n > 1.4$ Mev) in the core center was found to be $(2.4 \pm 0.2) \cdot 10^{14}$, and total flux was $(8.2 \pm 0.3) \cdot 10^{14}$. Experimental results were verified by energy-group calculations (18 groups). Good agreement between theory and experiment was also found for the channel spectra. The authors thank D. S. Pinkhasik, N. N. Aristarkhov, and the reactor personnel for assistance. There are 10 figures, 2 tables, and 2 Soviet references.

SUBMITTED: August 17, 1961

Table 1. Reaction cross sections in the core center.

Legend: (1) Reaction; (2) experiment; (3) σ calculated, given in barns.

Fig. 7.. Neutron transmission spectrum (n-hexane) for the horizontal channel B-3.

Card 3/4

X

28919
S/056/61/041/004/002/019
B108/B102

24.6600

AUTHORS:

Abramov, A. I., Yutkin, M. G.

TITLE:

$\text{Ne}^{21}(\text{n}, \alpha)\text{O}^{18}$ reaction with slow neutrons

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41,
no. 4(10), 1961, 1023-1024

TEXT: Calculations have shown that neon isotopes enter only one exothermic reaction with neutrons, namely, $\text{Ne}^{21}(\text{n}, \alpha)\text{O}^{18}$. A spherical ionization chamber with pure neon of 10 atm pressure was placed into a beam of slow neutrons from the thermal column of a 5P-5 (BR-5) reactor. The cut-off curve was taken with the aid of a continuous discriminator. The pulse spectrum, a peak with a prolonged tail on its left side, was found by differentiating this curve. The energy of the reaction, as determined from the position of the peak, is $Q = 0.696 \pm 0.019$ Mev. Within the limits of the experimental error this value agrees with the calculated value of $Q = 0.704$ Mev. The cross section for the $\text{Ne}^{21}(\text{n}, \alpha)\text{O}^{18}$ reaction with thermal neutrons was measured by comparing it with the cross section
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$\text{Ne}^{21}(\text{n}, \alpha)\text{O}^{18}$ reaction with slow neutrons

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B108/B102

for a $\text{He}^3(\text{n}, \text{p})\text{H}^3$ reaction. Two equal chambers, one filled with neon and the other with He^3 , were used for this purpose. They were alternately placed at one and the same spot, after which their counting rates were determined. The measurements were made with scattered neutrons a few meters away from the outlet of the thermal column. The ratio of the count rates was $13,090 \pm 208$. Since the He^3 content in the working mixture and the Ne^{21} content in natural neon (0.257%) were known, it was easy to find the ratio of the cross sections: $\sigma_{\text{Ne}^{21}}/\sigma_{\text{He}^3} = 0.0177 \pm 0.0059$. The uncertainty of the result is only due to the experimental error. With the (n,p) reaction cross section for He^3 which amounts to 5400 ± 200 barns, the authors found $\sigma[\text{Ne}^{21}(\text{n}, \alpha)\text{O}^{18}] = 96 \pm 33$ barns. Using the value of $\sigma_{\text{He}^3} = 5400$ barns, which was obtained for a neutron velocity of 2200 m/sec, is justified since the neutron spectrum from the thermal column of the

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Ne²¹(n, α)O¹⁸ reaction with slow neutrons S/056/61/041/004/002/019
B108/B102

BR-5 reactor is nearly Maxwellian. It is noted that the Ne²¹(n, α)O¹⁸ reaction, together with the He³(n,p)H³ reaction, may be used in fast-neutron spectrometry. The pulses from recoil nuclei will not interfere up to neutron energies of about 4 Mev. [Abstracter's note: Essentially complete translation.] There are 5 references: 2 Soviet and 3 non-Soviet. The three references to English-language publications read as follows: F. Everling et al., Nucl. Phys., 18, 529, 1960; R. J. Bell et al., Nucl. Phys., 14, 270, 1959; D. Hughes, R. B. Schwartz. Neutron Cross Sections, New York, 1958.

SUBMITTED: April 25, 1961

Card 3/3

S/903/62/000/000/011/044
B102/B234

AUTHORS: Abramov, A. I., Yutkin, M. G.

TITLE: Measurement of the inelastic collision cross sections of neutrons with energies between 0.6 and 2.4 Mev and Fe, Ni, and Nb nuclei

SOURCE: Yadernyye reaktsii pri malykh i srednikh energiakh; trudy Vtoroy Vsesoyuznoy konferentsii, iyul' 1960 g. Ed. by A. S. Davydov and others. Moscow, Izd-vo AN SSSR, 1962, 153-160

TEXT: The inelastic collision cross section were measured by the transmission method in inverse spherical geometry; the neutrons were obtained from proton-irradiated tritium targets, the neutron detector was a small-scale spherical ionization chamber with Ar-He³ (75:25) gas filling (11 atm) allowing separation of primary and inelastically scattered neutrons. The momentum spectrum was analyzed in each case in order to determine the transmission factors (a) with respect to all inelastic processes and (b) with respect to inelastic processes wherein a certain definite level is excited. The spectra $\sigma_{in}(E_n)$ obtained are compared with the Hauser-Feshbach curves and with experimental data (Phys. Rev. 95, 989, 1954; 101, 103, 1956). For Card 1/3

Measurement of the inelastic...

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Fe and Ni only the total inelastic collision cross sections could be determined; in the case of Fe this was due to the small difference between the two excited levels (0.845 and 2.08 Mev) below 2.2 Mev, and in the case of Ni since both Ni^{58} and Ni^{60} had no level below 1 Mev. Only with Nb it was possible to separate two groups of (nonresolved) levels: 0.741 - 0.809 and 0.958 - 1.08 Mev and thus also the partial cross sections could be determined. There are 3 figures and 3 tables.

ASSOCIATION: Fiziko-energeticheskiy institut Gosudarstvennogo Komiteta Soveta Ministrov SSSR po ispol'zovaniyu atomnoy energii (Physics and Power Engineering Institute of the State Committee of the Council of Ministers of USSR on the Utilization of Atomic Energy)

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Measurement of the inelastic...

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Iron

E_n , MeV	σ_{in} , barn	E_n , MeV	σ_{in} , barn
1,0	$0,20 \pm 0,05$	1,71	$0,66 \pm 0,08$
1,17	$0,72 \pm 0,10$	1,92	$0,65 \pm 0,10$
1,38	$0,87 \pm 0,17$	2,17	$0,87 \pm 0,13$
1,53	$0,81 \pm 0,07$		

Niobium

E_n , MeV	σ_{in} total, I	σ_{in} part I	σ_{in} part II
1,0	$0,25 \pm 0,11$	0,30	
1,2	$1,27 \pm 0,20$	0,57	0,85
1,4	$1,50 \pm 0,13$	0,40	1,15
1,6	$1,80 \pm 0,13$	0,42	1,38
1,8	$1,94 \pm 0,21$	0,53	1,30

Nickel

E_n , MeV	σ_{in} , barn	E_n , MeV	σ_{in} , barn
1,0	$< 0,05$	1,8	$0,50 \pm 0,13$
1,2	$< 0,05$	2,0	$0,62 \pm 0,10$
1,4	$< 0,03$	2,2	$0,75 \pm 0,11$
1,5	$0,08 \pm 0,06$	2,4	$0,85 \pm 0,11$
1,6	$0,25 \pm 0,08$		

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32011

S/089/62/012/001/015/019

B102/B138

26.2245

AUTHOR: Abramov, A. I.

TITLE: Measurement of cross sections of inelastic collisions between neutrons and chromium, iron, nickel, niobium, and molybdenum nuclei at energies up to 2.6 Mev

PERIODICAL: Atomnaya energiya, v. 12, no. 1, 1962, 62 - 64

TEXT: Inelastic scattering cross sections σ_{in} and partial inelastic cross sections $\sigma_{in,s}^m$ (scattering with excitation of m levels or level groups)

were measured in inverse spherical geometry. The tritium target of an electrostatic proton accelerator was used as neutron source, and a small He+Ar-filled ionization chamber for detection. The specimens were empty spheres 60 mm external and 30 mm internal diameter. The spectra of chamber pulses were measured with and without specimen. The specimen transmissions for both types of inelastic scattering were determined from the ratios of spectral peak areas. Formulas from Ref. 2 (H. Betho et al. J. Nucl. Energy, 2, 207, 1956) were used for calculations; those for Card 1/3 ✓

Measurement of cross sections...

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$\sigma_{in,s}^m$ were modified. Corrections were made for source anisotropy, finiteness of detector and other side effects. All calculations were carried out for natural isotope compositions. For Ni and Mo, $\sigma_{in,s}^m$ were determined with excitation of two level groups. The mean excitation energies were 0.8 and 1.0 Mev (Ni) and 0.8 and 1.1 Mev (Mo). The results are compared with those of other authors and with calculations carried out by the Hauser-Feshbach method (Phys. Rev. 87, 366, 1952). Though general agreement was found, certain deviations were observed. These were greatest between results based on neutron recording and those where γ -rays were used. They are attributed to the specific peculiarities of the latter. The partial cross sections pass through a maximum if the neutron energy is raised. The decrease after the peak is attributed to the influence of higher levels. If only few levels are excited the mean energies of inelastically scattered neutrons will also depend only weakly on the primary neutron energy. O. D. Kazachkovskiy and Yu. Ya. Stavisskiy are thanked for interest and help; M. G. Yutkin for calculations. There are 1 figure and 16 references: 5 Soviet and 11 non-Soviet. The four most recent references to English-language publications read as follows: N. Nath
Card 2/3

Measurement of cross sections...

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B102/B138

et al. Nucl. Phys. 14, 78 (1959); J. Van Loef, D. Lind. Phys. Rev., 101,
103 (1956); R. Day. Phys. Rev., 102, 767 (1956); J. Beyster, M. Walt,
E. Salmi. Phys. Rev., 104, 1319 (1956).

SUBMITTED: December 27, 1961

Card 3/3

STAVISSKIY, Yu.Ya.; ABRAMOV, A.I.; BELANOVA, T.S.; VAN'KOV, A.A.;
KOROLEVA, V.P.

Photonutron laboratory for research involving high-activity
sources. Atom. energ. 15 no.6:489-493 D '63. (MIRA 17:1)

ABRAMOV, A.K., inzh.; DERZHAVETS, Yu.A.; FYZH, O.A.; POSTERNYAK, Ye.F.,
FOMICHEV, A.G., red. izd-va; BELOGUROVA, I.A., tekhn. red.

[Design and testing of high-speed helical planetary reducing gear]
Konstruktsiia i ispytanie bystrokhodnogo shevronnogo planetarnogo
reduktora. Leningrad, 1961. 24 p. (Leningradskii Dom nauchno-
tekhnicheskoi propagandy. Obmen peredovym opytom. Seriya: Mekhani-
cheskaia obrabotka metallov, no.22) (MIRA 14:12)
(Gearing, Spiral)

ABRAMOV, A.K.; DERZHAVETS, Yu.A., inzh.; PYZH, O.A., inzh.

Helical planetary reducing gear with two floating members. Vest.
mash. 41 no.4:3-8 Ap '61. (MIRA 14:3)
(Gearing)

ACCESSION NR: AP4014637

S/0115/64/000/001/9008/0011

AUTHOR: Abramov, A. Kh.; Vigdorov, D. I.

TITLE: Methods of approximating experimental characteristics and estimation of maximum error of instruments on a digital computer

SOURCE: Izmeritel'naya tekhnika, no. 1, 1964, 8-11

TOPIC TAGS: computer, digital computer, measuring instrument, instrument error, estimating instrument error, experimental characteristic approximation, maximum instrument error

ABSTRACT: The experimental characteristic of an instrument is specified as a table with the argument values taken at equal intervals. Parameters a and b of this straight-line equation $y = ax + b$, are sought that minimize the maximum deviation v_1 . As a first approximation, the parameters are determined from a set of equations written by the method of the mean. Then, all calculated deviations v_1, v_2, \dots, v_n are regarded as a sequence of positive and negative numbers, among which three maximum deviations with alternating signs are

Card 1/2

ACCESSION NR: AP4014637

singled out. These three deviations are substituted into the set of equations, etc., which results in a second approximation. The process can be repeated as many times as needed. A "Minsk-1" digital computer, whose speed is 2,000-3,000 operations per second, was used for calculating the error of measurement of an angle/phase transducer intended for telemeter purposes. The program occupied 608 cells in the internal storage, and the overall machine time was 20 sec or less. Orig. art. has: 3 figures and 6 formulas.

ASSOCIATION: Azerbaydzhanskiy institut nefti i khimii im. M. Azizbekova
(Azerbaijani Institute of Petroleum and Chemistry)

SUBMITTED: 00

DATE ACQ: 14Feb64

ENCL: 00

SUB CODE: IE

NO REF SOV: 002

OTHER: 000

Card 2/2

ABRAMOV, A.Kh.; VIGDOROV, D.I.

Approximation of experimental characteristics and calculation
of maximum errors of measuring instruments using a digital
computer. Izv. tekhn. no.1:8-11 Ja '64.

(MIRA 17:11)

1 40212-65 ENT(1)/EXP(1)/EXP(1)/EXP(1)/EXP(1) 04-4

Card 1/1

A. I. Nekhoda, A. I.

USSR/Engineering

Furnaces

Welding - Methods

Jan 1947

"Major Repairs to the Body of a Rotary Furnace by Welding," A. I. Nekhoda, Chief Mechanic, A. I. Abramov, Technical Mechanic, Nev'yansk Cement Plant, 2 pp

"Tsoment" No 1

A rapid method of repairing a rotary furnace was needed in the Nev'yansk Cement Plant. The most desirable method was by using rivets, but this consumed too much time; therefore, welding was resorted to with a saving of about 13,000 man-hours. The operation of the furnace after repair by welding was considered satisfactory.

PA 29133

IL'IN, Nikolay Aleksandrovich; ABRAMOV, A.L., red.; MEMESHKINA, L.I.,
tekhn.red.

[Cooking of larch pulp] Varka tselliulozy iz listvennitay.
IUzhno-Sakhalinsk, Nauchno-tekhn.ob-vo bumazhnoi i derevo-
obrabatyvaiushchei promyshl., 1959. 38 p.

(MIRA 14:2)

(Woodpulp)

(Larch)

ABRAMOV, A.L.; NADTOCHIY, G.T., red.; MEMESHKINA, L.I., tekhn.red.

[Hidden potentialities for profitable production; collection of
articles on economic subjects] Rezervy rentabel'nosti; sbornik
statei na ekonomicheskie temy. Iuzhno-Sakhalinsk, Sakhalinskoe
knizhnoe izd-vo, 1960. 109 p. (MIRA 14:3)
(Sakhalin--Costs, Industrial) (Socialist competition)

CHERNYAVSKIY, Georgiy Ivanovich; ABRAMOV, A.L., red.; MEMESHKINA, L.I.,
tekhn. red.

[Profitableness of the fishing industry of Sakhalin] Voprosy
rentabel'nosti rybnoi promyshlennosti Sakhalina. Iuzhno-
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Monograph

UR /

Abramov, A. M. ; Zelikov, I. L. ; Idzon, M. F. ; Konarev, A. B. ; Mityashkin, D. Z. ; Nikol'skiy, L. A. ; Pronina, Ye. M. ; Romanov, K. F. ; Talanova, G. A.

Manufacture of gas-turbine engines Reference manual (Proizvodstvo gazoturbinnyykh dvigateley; spravocnoye posobie) Ed. by M. F. Idzon, Moscow, Izd-vo "Mashinostroyeniye", 66. 0472 p. illus., biblio., index. 5,000 copies printed

TOPIC TAGS: gas turbine engine, metalworking machinery, hot machining, metal machining, metal stamping, metal welding, mechanical metal cutting, hot forming

PURPOSE AND COVERAGE: This reference manual contains technical specifications for the design of parts and units of gas-turbine engines. Information is given on their manufacture by hot forming casting, cold forging, welding mechanical and electric processing, and also on equipment, technical control, automation of production processes and production organization. This book is intended for technologists of machine building plants, engaged in the production of stationary and transport gas-turbine engines. It will also be useful to designers and students of senior courses of the respective departments of institutions of higher

Card 1/4

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Ch. 3. Casting of parts (Written by Candidate of Technical Sciences I. L. Zelikov) -- 92

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Ch. 9. Organization of production (Written by Engineer G. A. Talanova) -- 441

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Card 4/4

DAVYDOV, Yuriy Petrovich; POKROVSKIY, Grigoriy Vasil'yevich; ABRAMOV,
A.M., kand.tekhn.nauk, retsenzent; MAKOVSKIY, G.M., inzh., red.;
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(Sheet-metal work)

AKHUN, B.N.; VASIN, L.V.; GITTIS, V.Yu.; KOLLEROV, L.K., kand.
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(Diesel engines)

(A) L 11593-66 EWT(m)/ENP(j)/T/EWA(c)/ETC(m) RPL WW/RM

ACC NR: AP6000355 SOURCE CODE: UR/0286/65/000/001/0018/0018

AUTHORS: Ivanov, V. S.; Smirnov, V. K.; Boryaz, V. N.; Migunova, I. I.;
Abramova, A. M.; Sidorova, T. I.; Kharitonov, N. P.; Breger, A. Kh.; Gail'din, V.A.

ORG: none

TITLE: Method for obtaining graft copolymers. Class 39, No. 176069¹⁵

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 21, 1965, 48

TOPIC TAGS: polymer, copolymerization, graft copolymer, radiation polymerization, imide, maleic acid

ABSTRACT: This Author Certificate presents a method for obtaining graft copolymers on the basis of poly-organosiloxanes by the interaction of ionizing radiation with a polyorganosiloxane powder in the presence of modifying additives. To improve the physicochemical properties of the graft copolymers and their thermal stability and solvent stability, imides, e.g., N-substituted imides of maleic acid, are used as modifying additives. The radiation dosage is 0.3--8 Mrad and the intensity of radiation is 0.05--0.7 Mrad per hour.

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0.5 to 3 mm, which were welded into initial symmetrical contours. The following variables were investigated: force of deformation for different materials and shapes, dependence of the thickness on the degree of deformation and shape, the loading necessary to form parts of convex and concave shapes, and the effect of elastic deformation on the precision of the process. The effect of heat treatment and lubrication on the deformation of the work pieces was also determined. Experiments were made with a 20 ton press, using unclamping dies with adjustable contours (cylindrical, conical, convex, etc.). The following measurements were made: material thickness, sample height, forming length, sample diameter, and grid coordinate deformation. Deformations as high as 20% were achieved with excellent dimensional tolerances. Changes in thickness are given as a function of the degree of deformation and the limiting final deformation for a single shape forming trial was tabulated for the different materials. The materials, 30KhGSA and VT1-1, could only be formed about 8%; while EI602, 1Kh18N9T, steel 20, and AMtsA-M could be formed as high as 20%. Schematic drawings of the PKD-2 press and the die layout are presented. Orig. art. has: 18 figures, 3 tables, 50 formulas.

SUB CODE: 13,11/

SUBM DATE: none/

ORIG REF: 003

Card 2/2

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(for Abramov). 3. Verkhne-Ufaleyskiy metallurgicheskiy
zavod (for Shabalin).

(Open-hearth furnaces---Equipment and supplies)
(Steel ingots)